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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/057,622

10/25/2001

John F. O'Connor JR.

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07/02/2004

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EXAMINER

DUONG, THO V

ART UNIT

PAPER NUMBER

3743

DATE MAILED: 07/02/2004

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,622

Applicant(s)

O'CONNOR, JOHN F.

Examiner

Tho v Duong

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Receipt of applicant's amendment filed 6/20/2003 is acknowledged. Claims 1-12 are pending.

Response to Arguments

Applicant's arguments filed 6/20/2003 have been fully considered but they are not persuasive. In response to applicant's argument that a rearwardly curved impeller is not merely a fix for reduced sound generation, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Regarding claim 1, reference to Budelman'331 substantially discloses all of claimed limitation except for the rearwardly impeller for cooling fan. Nelson teaches to use rearwardly impeller as cooling fan for the purpose of reducing sound generation of the fan. The expectation of success for the combination of the devices is the improved noise performance of the cooling fan. Therefore, claim 1 still maintains rejected. As regarding claims 2-9, 11 and 12, applicant argues that the final result obtained with applicant's impeller with specific characteristics as claimed is in quadrupling performing. However, applicant does not disclose in the original disclosure any criticality for each of the specific claimed range. In the specification, the applicant discloses the claimed range is selected as "preferably" or "should" which does not provide any criticality for selecting the claimed range. The examiner agrees that applicant has disclosed a criticality for having the combination of the specific characteristics as disclosed in claim 10, which would enhance the performance of the improved centrifugal impeller by 38% in efficiency (page 3, lines 25-34). However, applicant

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does not disclose any criticality or how each claimed range in claims 2-9,11 and 12 would contribute to the overall performance of the fan. It is possible that only the combination of the specific characteristics can enhance the performance of the improved impeller (with shown criticality), while having only one optimum range of a dimension of the fan may not enhance the performance of the fan. Since applicant does not disclose any criticality for selecting the optimum ranges, it would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain the claimed ranges since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9,11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budelman (US 6,244,331) in view of Nelson (US 4,021,696). Budelman discloses (figure 5a) a centrifugal impeller (522) for use in a heat sink (410) having a multiplicity of small upright spaced apart heat dissipation elements (414) in an array defining a multiplicity of small air flow passageways (536) there between with a cavity (418) located centrally there within; the impeller (522) is disposed adjacent to and about the array of the heat dissipating elements and to be driven

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by an electric motor (524) disposed in the central cavity; the impeller (522) being open radially inwardly for radial communication with the airflow passageways between the heat dissipating elements (414) and at least partially open radially outwardly for the discharge of spent cooling air; the impeller (522) also having a radially extending backplate (534) which is exposed upwardly and which defines an inlet opening for the axial downward flow (538) of cooling air; the impeller having blades (526) forming part of the impeller and serving to effect a right angle turn in air flow direction and to withdraw air radially outwardly from the passageways.

Budelman does not disclose that the blades (526) are rearwardly curved air moving blades.

Nelson teaches (figures 2a, 3a) about a centrifugal impeller (31) having a plurality of rearwardly curved air moving blades (46,47) forming part of the impellers to reduce noise generation of the impeller independently of the direction of fan rotation. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Nelson's teaching in the Budelman's centrifugal fan to reduce noise generation of the impeller independently of the direction of fan rotation. Regarding claims 2-9,11 and 12, Nelson also discloses (figure 3a,3b) the impeller's geometrical relationships such as the impeller radio dimension to the impeller overall radius, the number of blades, the inlet angle of blades and the outlet angle of blades.

Nelson does not disclose any optimum range of claimed invention. It would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain the claimed ranges, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Allowable Subject Matter

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wang (US 5,988,979) discloses a centrifugal blower wheel with an upwardly extending smoothly hub.

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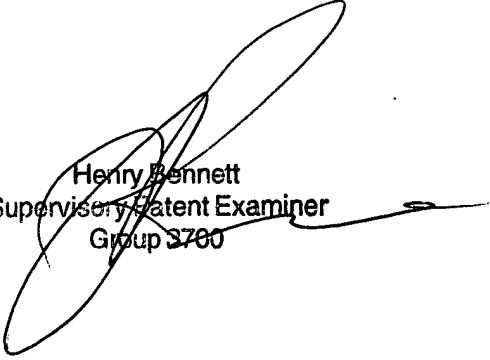
Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

Tho Duong

June 15, 2004


Henry Bennett
Supervisory Patent Examiner
Group 3700